

**REMARKS**

This Amendment is in response to the Notice of Non-Compliant Amendment dated July 29, 2009 and the Final Office Action dated March 16, 2006 ("FOA"). In the Office Action, claims 10, 14, 15 and 17 were rejected under 35 USC §101, claims 1-15 were rejected under 35 USC §102, and claims 16-18 were rejected under 35 USC §103. By this Amendment, claims 1, 10 and 15 are amended. Currently pending claims 1-3 and 5-18 are believed allowable, with claims 1, 10 and 12 being independent claims.

CLAIM REJECTIONS UNDER 35 USC §101:

Claims 10, 14, 15 and 17 were rejected under 35 USC §101 as allegedly directed to non-statutory matter. By this amendment, claims 10 is amended to recite, in part, "A computer program product embodied in computer memory . . . ." Thus, claim 10 recites a computer program product in conjunction with a computer memory. "When a computer program is recited in conjunction with a physical structure, such as a computer memory, USPTO personnel should treat the claim as a product claim." *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*, pp. 53-54 (Oct. 26, 2005) ([http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101\\_20051026.pdf](http://www.uspto.gov/web/offices/pac/dapp/opla/preognotice/guidelines101_20051026.pdf)). Thus, claim 10 is believed to be directed to statutory subject matter.

Claim 14 and 17 are dependent on claim 10 and are therefore believed to be directed to statutory subject matter for at least the same reasons as claim 10.

Claim 15 is also amended to recite a computer program in conjunction with a computer memory. Thus, claim 15 is believed to be directed to statutory subject matter.

CLAIM REJECTIONS UNDER 35 USC §102:

Claims 1-15 were rejected as anticipated under 35 USC §102 by Rothermel et al., "A Fault-Tolerant Protocol for Providing the Exactly-Once Property of Mobile Agents", 1998 ("Rothermel"). To anticipate a claim under 35 USC §102, a reference must teach every element of the claim. MPEP 2131.

Claim 1

As an initial matter, in the Response to Arguments section of the Final Office Action, the Examiner states, "it is not clearly understood how it is possible to agreeing on a primary place and aborting/or undoing any operation in connection with the mobile in any other place of the respective stage and then moving a modified mobile agent resulting from the successful execution to the next stage to at least two forwarding places." FOA, page 7. The Examiner argues the limitations contradict each other and render the claim indefinite. The Applicants respectfully disagree with the Examiner.

The Applicants submit that claim 1, as well as the specification, details a method of operating a mobile agent that achieves fault-tolerance by replicating the mobile agent. Replication of the mobile agent is similar to the addition of redundancy and enables the mobile agent to continue its execution despite failures. The blocking of the mobile agent, therefore, is prevented. Application, page 4, lines 1-3.

Contrary to the Examiner's comments, there is no contradiction in the claim elements of claim 1. When a mobile agent, redundantly executing at a plurality of places, is successfully executed, a primary place among the set of places is chosen. Operations performed by the mobile agent in other places of the stage are aborted and/or undone. The modified mobile agent resulting from the successful execution is then moved to the next stage to at least two forwarding places, where the process can repeat. The Applicants find on contradiction within these claim element. Furthermore, the steps recited in claim 1 are well detailed in the specification. See, for example, Application, page 4, line 14 - page 5, line 19, and page 6, line 15 - page 7, line 13.

Claim 1 recites, in part, "generating a decision in each stage, the decision including the primary place that corresponds to the place in which the mobile agent has executed successfully, the set of places of the next stage to which the modified mobile agent is moved, and the resulting modified mobile agent." In rejecting claim 1, the Examiner argues this claim limitation is disclosed in Rothermel. The Examiner cites page 3, column 1, lines 1-15, Figure 2 and 3 of Rothermel in support of this position. FOA, pg. 3 and 7. The Applicants respectfully disagree with the Examiner's conclusions.

Claim 1 requires a generated decision at each stage. Furthermore, the generated decision includes: (a) the primary place that corresponds to the place in which the mobile agent has executed successfully, (b) the set of places of the next stage to which the modified mobile agent is moved, and (c) the resulting modified mobile agent. Thus, the generated decision

at each stage requires providing at least all of the above limitations.

The Applicants submit that Rothermel does not teach or suggest a generated decision with such three items recited in claim 1. Rothermel merely mentions, "[t]he node with the highest priority becomes the initial worker of a stage." Rothermel, page 3, col. 1, lines 12-13. There is no teaching or suggestion of generating a decision which includes the primary place that corresponds to the place in which the mobile agent has executed successfully, the set of places of the next stage to which the modified mobile agent is moved, and the resulting modified mobile agent.

The Examiner points to Figures 2 and 3 of Rothermel, arguing that the reference shows the agent moving to a next stage. Claim 1, however, recites that generated decision includes the primary place that corresponds to the place in which the mobile agent has executed successfully and the set of places of the next stage to which the modified mobile agent is moved. Whether Rothermel discloses the agent moving to various stages is immaterial to the claim element at hand.

For at least these reasons, claim 1 is believed allowable over the cited art. The Applicant respectfully request reconsideration and allowance of claim 1.

Claims 2, 3, 5-9, 13 and 16

Claim 2, 3, 5-9, 13 and 16 are dependent on (either directly or indirectly) and further limit claim 1. Since claim 1 is believed allowable over the cited documents, claims 2, 3, 5-9, 13 and 16 are also believed allowable for at least the same reasons as claim 1.

Claim 10

Claim 10 recites, in part, "generating a decision in each stage, the decision including the primary place that corresponds to the place in which the mobile agent has executed successfully, the set of places of the next stage to which the modified mobile agent is moved, and the resulting modified mobile agent."

As discussed above for claim 1, the Applicant respectfully submits that Rothermel does not teach or suggest generating decision which includes the primary place that corresponds to the place in which the mobile agent has executed successfully, the set of places of the next stage to which the modified mobile agent is moved, and the resulting modified mobile agent, as recited in claim 10. Rothermel merely mentions, "[t]he node with the highest priority becomes the initial worker of a stage." Rothermel, page 3, col. 1, lines 12-13. Moreover, Figures 2 and 3 of Rothermel fail to disclose or suggest any details about the information included in the generated decision.

For at least these reasons, claim 10 is allowable over the cited art. The Applicant respectfully request reconsideration and allowance of claim 10.

Claims 11, 14 and 17

Claim 11, 14 and 17 are dependent on and further limit claim 10. Since claim 10 is believed allowable over the cited documents, claims 11, 14 and 17 are also believed allowable for at least the same reasons as claim 10.

Claim 12

Claim 12 recites, in part, "means for generating a decision in each stage, the decision including the primary place that corresponds to the place in which the mobile agent has executed successfully, the set of places of the next stage to which the modified mobile agent is moved, and the resulting modified mobile agent."

As discussed above for claim 1, the Applicant respectfully submits that Rothermel does not teach or suggest a decision which includes the primary place that corresponds to the place in which the mobile agent has executed successfully, the set of places of the next stage to which the modified mobile agent is moved, and the resulting modified mobile agent, as recited in claim 12. Rothermel merely mentions, "[t]he node with the highest priority becomes the initial worker of a stage." Rothermel, page 3, col. 1, lines 12-13. Moreover, Figures 2 and 3 of Rothermel fail to disclose or suggest any details about the information included in the generated decision.

For at least these reasons, claim 12 is allowable over the cited art. The Applicant respectfully request reconsideration and allowance of claim 12.

Claims 15 and 18

Claim 15 and 18 are dependent on and further limit claim 12. Since claim 12 is believed allowable over the cited documents, claims 15 and 18 are also believed allowable for at least the same reasons as claim 12.

CLAIM REJECTIONS UNDER 35 USC §103:

Claims 16-18 were rejected under 35 USC §103 as being obvious over Rothermel in view of Greenberg et al. "Mobile Agents and Security", July 1998, IEEE Communications Magazine ("Greenberg"). A *prima facie* case for obviousness can only be made if the combined reference documents teach or suggest all the claim limitations. MPEP 2143. Furthermore, to establish a *prima facie* case of obviousness, there must be some suggestion or motivation to modify the reference or to combine reference teachings. MPEP 2143.

Claims 16-18 recite, in part, "wherein non-primary places are configured to verify the modified mobile agent has successfully arrived at the set of places of the next stage to which the modified mobile agent is moved." In rejecting claims 16-18, the Office Action acknowledges that Rothermel fails to teach that non-primary places are configured to verify the modified mobile agent has successfully arrived at the set of places of the next stage to which the modified mobile agent is moved. Nevertheless, the Examiner alleges that Greenberg teaches such limitations at page 6, lines 25-45. The Applicant has reviewed Greenberg and respectfully disagrees with the Examiner's conclusions.

Greenberg appears to discuss various misuses of mobile agents (page 3-6) and techniques for protecting hosts against such misuses (page 6-13). Two techniques discussed by Greenberg and relied upon by the Examiner in rejecting claim 16 are Authenticating Credentials and Access-Level Monitoring and Control. Greenberg, page 6, lines 25-45. The first technique (Authenticating Credentials) utilizes digital certificates to verify the identity of the mobile agent's author/sender, its

origin, and whether it has been tampered with. The second technique limits the mobile agent's access and use of system resources, information and services. In essence, reference monitor polices the mobile agent's activities and safeguards against unauthorized activities.

The Applicant respectfully submits that nowhere in Greenberg, including the passages cited by the Examiner, is there a teaching or suggestion of that non-primary places are configured to verify the modified mobile agent has successfully arrived at the set of places of the next stage to which the modified mobile agent is moved. Although the Office Action alleges that the security manager verifies contents going into the next stage in a mobile agent, the Applicant finds no such teaching or suggestion in Greenberg. Furthermore, the security manager is identified as a Java runtime component and not non-primary places as recited in claims 16-18.

The Examiner argues, "Rothermel-Green teaches verification technique to ensure proper contents are sent from the sender to destination, providing a way of checking the integrity of the contents, this is taught in Green pg 6, lines 25-27." FOA, pg. 7-8. The applicants respectfully submit that page 6, lines 25-27 relate to digital signatures that can be used to verify the identify of the mobile agent's author and of its sender, where and when it was sent, and that it has not been tampered with in transit. Greenberg does not disclose or suggest that non-primary places are configured to verify the modified mobile agent has successfully arrived at the set of places of the next stage to which the modified mobile agent is moved.

Moreover, obviousness cannot be established by combining prior art to produce the claimed invention absent some teaching



or suggestion supporting the combination. *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by an Examiner does make the modification obvious unless the prior art suggested the desirability of the modification. *Id.*

The Examiner argues, "It would have been obvious . . . to combine teachings of Rothermel and Greenberg because having a separate verification entity to verify the content of the message going into the next stage in a mobile agent system as taught by Greenberg would enhance the security and fault tolerant aspect of Rothermel by verifying the content for successful arrival at the destination." The Office Action, however has not explained, and it not evident, why a person of ordinary skill in the art would have found it obvious to reconstruct Greenberg to "enhance the security and fault tolerant aspect of Rothermel by verifying the content for successful arrival at the destination." In this regard, neither Rothermel nor Greenberg express any appreciation of such alleged advantages. In this light, it is apparent that the only suggestion for combining Rothermel and Greenberg in the manner advanced by the Examiner stems from hindsight knowledge impermissibly derived from the Applicant's disclosure.

For at least these reasons, claims 16-18 are allowable over the cited art. The Applicant respectfully request reconsideration and allowance of claims 16-18.

#### **CONCLUSION**

In view of the forgoing remarks, it is respectfully submitted that this case is now in condition for allowance and

such action is respectfully requested. If any points remain at issue that the Examiner feels could best be resolved by a telephone interview, the Examiner is urged to contact the attorney below.

No fee is believed due with this Amendment, however, should a fee be required please charge Deposit Account 50-0510. Should any extensions of time be required, please consider this a petition thereof and charge Deposit Account 50-0510 the required fee.

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Respectfully submitted,

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